



## HIGHWAY SIGNING FIELD SECTION 903

**903.1 SCOPE.** To establish procedures for inspecting and reporting those items specified in Specification Sec 903 or when specified in contracts by special provisions for which Materials has inspection responsibility and which are not specifically covered in Materials Details of the Specifications. This Section is to complement the Construction Manual, Sec 900.

### 903.2 APPARATUS.

- (a) Magnetic gauge, reading range of 0-40 mils [0-1000  $\mu\text{m}$ ].
- (b) Rule with suitable graduations to accurately measure the material to be inspected.

**903.3 PROCEDURE.** The items for highway signing specified in Specification Sec 903 normally inspected by Materials are galvanizing of steel trusses, posts, etc.; bolts, nuts and washers; and polyurethane foam.

**903.3.1** Field determination of weight [mass] of coating is to be made on each lot of material furnished. The magnetic gauge is to be operated and calibrated in accordance with ASTM E376. At least three members of each size and type offered for inspection are to be selected for testing. A single-spot test is to be comprised of at least five readings of the magnetic gauge taken in a small area and those five readings averaged to obtain a single-spot test result. Three such areas should be tested on each of the members being tested. Test each member in the same manner. Average all single-spot test results from all members to obtain the average coating weight [mass] to be reported. The minimum single-spot test result would be the minimum average obtained on any one member. Material may be accepted or rejected for galvanized coating on the basis of magnetic gauge. If a test results fails to comply with the specifications, that lot should be resampled at double the original sampling rate. If any of the resample members fail to comply with the specification, that lot is to be rejected. The contractor or supplier is to be given the option of sampling for Laboratory testing, if the magnetic gauge test results are within minus 15 percent of the specified coating weight [mass].

**903.3.2** Bolts and nuts specified to meet the requirements of ASTM A307 shall be accompanied by a manufacturer's certification statement that the bolts and nuts were manufactured to comply with the requirements of ASTM A307 and, if required by the specifications, galvanized to comply with the requirements of AASHTO M232, or were mechanically galvanized and meet the coating thickness, adherence, and quality requirements of AASHTO M232, Class C. High strength bolts, nuts, and washers shall be accompanied by a manufacturer's inspection test report for each production lot or shipping lot furnished and certifying that the bolts furnished conform to the requirements specified. All bolts, nuts, and washers are to be identifiable as to type and manufacturer. Bolts, nuts, and washers manufactured to meet ASTM A307 will normally be identified on the packaging since no special markings are required on the item. High strength bolts and nuts require special marking on the item. The specified AASHTO is to be consulted for the required identification marks on high strength bolts and nuts. Dimensions are to be as shown on the plans or as specified. Weight [Mass] of zinc coating, when specified, is to be determined by magnetic gauge in the same manner as described in paragraph 903.3.1 of this Section except a smaller number of single-spot tests will be sufficient. Samples for Laboratory testing are only required when requested by the State Project Operations Engineer-Materials, or when field inspection indicates questionable



compliance. When samples are taken, they are to be taken at the frequency and of the size shown in [Table 2 of Field Sec 1040](#) of this Manual.

**903.3.4** Polyurethane foam used for footings for embedded type sign posts is to be accepted on the basis of manufacturer's certification and random sampling and testing. The manufacturer's certification is to show typical test results representative of the material and certify that the material supplied conforms to all of the requirements specified. Random samples are to be taken from approximately 10 percent of the lots offered for use. A sample is to consist of a portion of each component adequate in size to yield 2 cu ft [0.5 cu.meters] of polyurethane foam, after mixing. SiteManager is to be used to submit a record when submitting samples to the Laboratory. Very small quantities of polyurethane foam may be accepted on the basis of brand name and labeling, provided satisfactory results are obtained in the field.

**903.3.5 Flexible Delineator Posts.** Flexible delineator posts are to be accepted on the basis of manufacturer and brand name approval, manufacturer's certification certifying that the posts and reflective sheeting furnished are of the same composition as originally qualified for manufacturer and brand name approval and in no way has been altered or changed, and field inspection for dimensions and workmanship. Samples are only to be taken when directed by the State Project Operations Engineer-Materials. A list of those brand names and manufacturer's which have been qualified is shown [FS-903 Table 1](#) of this Manual.

**903.4 SAMPLE RECORD.** The sample record shall indicate acceptance, qualified acceptance, or rejection. Appropriate remarks, as described in [General Sec 7.1.2](#) of this Manual, are to be included in the report to clarify conditions of acceptance or rejection. Distribution of reports for materials purchased under a Department purchase order is to be as described in [Field Sec 2001](#) of this Manual.

**903.4.1** Tests for weight [mass] of coating are to be reported through SiteManager. If a sample is submitted to the Laboratory for testing, SiteManager is to be used. The Laboratory will perform the designated tests and complete the report.

**903.4.2** Polyurethane foam shall be reported through SiteManager. The manufacturer's certification shall be retained in the district office, except when reporting very small quantities accepted by brand name and labeling.

**903.4.3** Flexible delineator posts shall be reported through SiteManager. The manufacturer's certification shall be retained in the district office.